

# Invitation To Bid

## Addendum #1



Department Of Executive Services  
Finance and Business Operations Division  
**Procurement and Contract Services Section**  
206-684-1681 TTY Relay: 711

Date: **April 10, 2006**

ITB Title: **Boat, Rescue, Patrol, 37 FT.**

ITB Number: **IT13057-AAB**

Revised Due Date/Time: **April 20, 2006- 2:00 P.M.**

Buyer: Amon Billups, [amon.billups@metrokc.gov](mailto:amon.billups@metrokc.gov), 206 263-4270

This addendum is issued to revise Invitation to Bid 13057-AAB, advertised March 16, 2006 as follows:

1. Change the bid opening date from April 18, 2006, to Thursday April 20, 2006, at 2:00 PM, exactly.
2. Replace Section 6, Technical Specifications, with Section 6 (Rev.1) attached.

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**To be eligible for award of this invitation to bid, this addendum must be signed and submitted along with the original invitation to bid or under separate cover to: King County Procurement & Contract Services Section, Exchange Building, 8<sup>th</sup> Floor, 821 Second Avenue, Seattle, WA 98104-1598. Office hours: 8:00 a.m. - 5:00 p.m., Monday – Friday.**

Company Name

Address		City / State / Postal Code	
Authorized Representative / Title	Signature	Phone	Fax
Company Contact / Title	Email	Phone	Fax
Delivery guaranteed: <input type="checkbox"/> Yes <input type="checkbox"/> No	Days after order:	Prompt Payment Discount Terms: ____ %- ____ Days, Net ____	

This Invitation to Bid will be provided in alternative formats such as Braille, large print, audiocassette or computer disk for individuals with disabilities upon request.

**SECTION 6 - (REV.1) TECHNICAL SPECIFICATIONS****6-1 Definition and Description**

The boat is an all welded aluminum planning catamaran. Its overall length is 37 feet 6 inches including jet guard grid platform with a beam of 13 feet 6 inches including a foam/air hybrid boarding collar. Two marine diesel inboard engines supply power, each having 425 horsepower at 3000 rpm. They will be driving twin water jets each with independent transmission systems capable of and/or reversing the pumps. The boat platform shall be stable for a safe offshore patrol and rescue operations. The power and drive units shall be of sufficient strength and maneuverability to adequately deal with surf line rescues and towing operations. The boat shall be able to be easily converted to pass under structures with a minimum clearance of 11 feet from the water level.

Staffed with a two-deputy crew this boat shall be fully capable of open water emergency responses in all weather and water conditions including but not limited to:

- A. 24 hour per day patrol
- B. Search and Rescue
- C. Air-Sea Disasters
- D. Navigation and Communications
- E. Medical Support and Transportation
- F. Surface to Air Transfers
- G. Fire Suppression and Rescue
- H. De-Watering and Extractions
- I. Tow and Salvage
- J. Dive Operations
- K. Heavy Weather Operations
- L. Port and Waterway Safety and Security Missions

**6-2 General**

The boat covered by these specifications shall be completed with all necessary equipment and accessories.

**A. Product**

The successful bidder shall be the actual boat builder/manufacturer. The boat shall be the product of a builder/manufacturer who has already fabricated units of the same type, which have been in successful use for a minimum of two (2) years of service. The minimum two years of service of the unit/s shall be or have been in sheriff, police, fire, or military type service and have demonstrated their satisfactory service and ability to perform the function for which the vessel was designed and intended. Records/references of this history shall be submitted along with the bid. All materials used in the construction and equipment installed shall be new and free from all defects.

B. Intent

It is the intent of these specifications to describe, in detail, the construction, machinery installation, outfitting, and delivery of one (1) twin diesel-jet drive/thirty-seven foot six inch patrol rescue boat.

The boat shall be delivered afloat to the King County Sheriff's Office completely equipped as herein described and ready for service.

In case the details which are impractical to fully specify, or of inadvertent omissions from the plans and specifications, or inadvertent inclusions therein, it is understood that the intent of the plans and specifications shall be carried out in all respects in accordance with the best boat building practice. Materials, construction, and equipment shall be first-class in every respect, in order to produce boats of the maximum strength and durability for the rugged service anticipated. This boat shall have an expected life of not less than twenty (20) years. The boat builder shall bear this in mind while designing and building the boat. For this reason, certain minimum qualities and workmanship are specified which may exceed those normally furnished in pleasure boats.

C. General Description

- TYPE: Pilot House Patrol Rescue Boat
- LENGTH OVERALL: 37' 6", +/- 6"
- BEAM OVERALL: 13' 6", +/- 6" (Including Foam/Air Boarding Collar)
- DRAFT HULL/MAX: 21"
- DEAD RISE (STERN): 15 Degrees
- DEAD RISE (BOW): 45 Degrees
- DISPLACEMENT: 17,000 lbs. (max. dry)
- FUEL: 300 Gallons (min.)
- FREEBOARD: 45" @ Midship

6-3 Design

**Offerors shall respond to each specification with a check (✓) mark to indicate compliance with the item specified. Any deviations from the specifications must be described in detail. Failure to respond to each specification shall result in disqualification of the Offeror.**

A. Hull

- The hull shall be an aluminum catamaran type, with a 15-degree stern dead rise and a 45-degree bow dead rise. \_\_\_\_\_
- The hull shall be constructed of 5083 or 5086 alloy aluminum. All extrusions shall be 6061T6. \_\_\_\_\_
- Bottom plating shall be a minimum of .250" in thickness. \_\_\_\_\_
- Side and tunnel plating shall be a minimum of .190" in thickness. \_\_\_\_\_
- Framing shall be on 24" centers with longitudinal of 2x3 channel running on approximately 10" centers. \_\_\_\_\_
- Transverse deck framing shall be on 12" centers. \_\_\_\_\_
- The hull shall have extruded rub strakes on the port and starboard sides. \_\_\_\_\_

8. All hull seams shall be fully back gouged to achieve full weld penetration. \_\_\_\_\_
9. Any protrusions to the hull below the waterline shall have a water diversion tab welded in place to prevent snagging hazards. \_\_\_\_\_
10. The hull shall have integral 4-point lifting lugs. \_\_\_\_\_
11. Watertight integrity shall be maintained by dividing each hull into three (3) sections for a total of six (6) watertight compartments. \_\_\_\_\_
12. Six (6) watertight hatches shall be manufactured by Freeman, model #1524HAALR and shall be welded in place. \_\_\_\_\_
13. The 2-engine room access hatches shall be over the engines and shall be large enough to allow for engine replacement. Engine room hatches shall have gas-lift assist and secure closed with hatch "dogs." \_\_\_\_\_
14. The engine rooms shall be insulated for noise and heat. Insulation (Sound barrier type) shall be a minimum of 2" thick. \_\_\_\_\_
15. The engine rooms shall have lighting. \_\_\_\_\_
16. The hull shall be engineered to stay afloat with the entire deck flooded. \_\_\_\_\_
17. The hull shall have four (4) large deck scuppers per side. \_\_\_\_\_
18. The hull shall have a minimum of four (4) zinc anodes. The zincs shall be 6"X12" and bolted to the hull. \_\_\_\_\_
19. The port and starboard bow quarters shall each have a 10" cleat. \_\_\_\_\_
20. Four (4) 10" spring line cleats shall be installed on the gunnels flats. \_\_\_\_\_
21. Two (2) heavy-duty pipe bollards structurally tied to the hull stringers below deck shall be installed at the port and starboard stern quarters. \_\_\_\_\_
22. A twin pipe bollard shall be installed at the bow in front of the anchor roller. \_\_\_\_\_
23. In addition to the cleats and bollards, a total of four (4) flush line attachments points shall be integrated into the gunnels edge. \_\_\_\_\_
24. All stainless steel fasteners shall be ASTM A 276 type 316 alloys throughout. \_\_\_\_\_
25. The leading edge of the hulls on the bow from chine intersection to the bottom of the boarding collar shall have a minimum 2" D rubber blind fastened with 316 stainless steel bolts. \_\_\_\_\_
26. The leading edge of the hulls from the chine intersection to approximately 4 inches below the waterline shall have welded structural log catching teeth. \_\_\_\_\_

27. The hull shall be fitted with a hybrid style of boarding collar on both sides and including the bow. The collar consists of three (3) components: an inner air bladder. A mid layer of polyethylene foam, and an outer urethane coated fabric sheath. The collar is manufactured by Wing Inflatables, Arcata, CA. The collar shall be of a tapered design, wrapping fully around the bow at its smallest section and largest from mid-ship aft. \_\_\_\_\_
28. The transom shall have a cutout that allows for easy access to the stern jet guard/work platform. The cutout shall incorporate the towing rope reel to the port and a minimum of 38" of access to the starboard of center. The tow reel shall be capable of holding 300' of 5/8" line. \_\_\_\_\_
29. The stern jet guard/work platform shall be the full width of the transom and extend aft approximately 5'. \_\_\_\_\_
30. The stern jet guard/work platform shall have a 4" high "D" rubber guard on all three sides, blind fastened with 316 stainless steel bolts. \_\_\_\_\_
31. The stern jet guard/work platform shall have two (2) tie pockets, each tie pocket shall be able to handle a 1/2" line. \_\_\_\_\_
32. The stern jet guard/work platform shall have a removable dive ladder of open rung construction. The ladder shall have stowage designed into the boat. \_\_\_\_\_
33. Handrails shall be placed on the stern jet guard/work platform to assist in using the dive ladder. \_\_\_\_\_
34. The hull shall have an anchor rode locker forward. \_\_\_\_\_
35. The deck shall have 1-1/4" aluminum cockpit railings. Railings shall be all TIG welded. \_\_\_\_\_
36. A removable bow ladder shall be custom designed to facilitate beach boarding over the center bow. The ladder shall have stowage designed into the boat. \_\_\_\_\_
37. Dive tank stowage shall be incorporated into the cockpit layout. A minimum of two (2) 80cf steel SCUBA tanks shall be stowed and readily accessible. \_\_\_\_\_
38. One (1) 24" ring buoy shall be installed with stainless steel mounts on the transom. The ring buoy shall be a CAL-JUNE model #G024T. \_\_\_\_\_
39. Stowage for drafting hoses and pike poles shall be incorporated into the hull sides between the cabin and gunnels. \_\_\_\_\_
40. Two (2) custom designed removable davits with a minimum lifting capacity of 1,000 lbs. and manual stainless steel winch by THERM INC. (p/n – M4042PB55) shall be installed. \_\_\_\_\_
41. The davits shall be designed to fit into deck sockets with DELRIN bushings in four (4) locations. Two (2) at the stern and two (2) at or near the foredeck. \_\_\_\_\_
42. The hull shall have external ventilation ducts and engine compartment air induction that is adequate and in accordance with all USCG specifications. The ducting shall be installed so that it does not collect water or that it traps air in the bilge. \_\_\_\_\_

43. The ventilation shall provide sufficient air to the engines at 3000 rpm.

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44. All normal exposed walking surfaces shall be covered in a non-skid coating.

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- B. Engines and Propulsion

1. Twin engines shall be Cummins QSB 5.9 425GS 425 HP turbo after-cooled diesel engines

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2. Engines shall come with complete alarm systems supplied with 24V starters and alternators installed as isolated grounds. The displacement per engine shall be 5.9L (359ci) each shall be capable of 425 HP @ 3000RPM.

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3. A permanently installed oil change system for both engine and transmission lube shall be provided for each engine.

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4. The engines shall each have a RACOR 900MA with a 10 micron fuel filter.

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5. The engines shall be furnished with permanently connected 120V block heaters switched from the cabin breaker panel.

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6. The engines shall have a wet type exhaust system. It shall be at least 6" diameter and the elbows and Y connections shall be made of stainless steel.

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7. The exhaust shall be connected to a vertically mounted muffler and routed to the transom under the work grid.

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8. Back Flow preventors shall be fitted to each exhaust outlet.

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9. Twin transmissions, Marine Gear Twin Disc 5075SC with a gear ratio of 1:1.15.

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10. The transmissions shall have engine mounted oil coolers.

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11. Twin Hamilton Jet Drives HJ292 with 17.0kw impellers. Jet drives shall have high-pressure alarms, steering direction senders, and gauges.

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12. Drive couplings shall be AquaDrive #CV30 152X245M.

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C. Fuel System

1. The fuel system shall have a minimum capacity of 300 gallons divided between the hulls.

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2. The 150 gallon minimum fuel cells shall be constructed of ¼" 5052 alloy.

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3. Each fuel cell shall have three (3) baffles equally spaced apart.

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4. Fittings shall be provided for fuel withdrawal and return lines, in addition a withdrawal suction hose for fuel stripping and a 2" sounding and inspection standpipe – 2" fill hose and 5/8" vent hose.

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5. The electric gauge sender unit shall be WEMA (p/n - WEM S3U22).

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6. Each fuel cell shall have the electric gauge sender installed so it can be removable and accessible for service.

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7. All hoses shall be AEROQUIP (p/n - FC234), fuel hose with reusable stainless steel end fittings – ½" #8 size minimum. \_\_\_\_\_
  8. The filter system shall be a RACOR 900 MA with T-handle vacuum gauge (p/n – 111669). \_\_\_\_\_
  9. Ball valves on all lines shall be full-port, 316 stainless steel. \_\_\_\_\_
  10. All hoses shall be supported with stainless steel hose straps (minimum every 16") chaff protection on all penetrations within hose runs. \_\_\_\_\_
- D. Fire Suppression System
1. Each engine room shall have an automatic fire suppression system. \_\_\_\_\_
  2. Each engine room shall have a single extinguisher. SEAFIRE (p/n – FG 150 M with FM 200 extinguishing agent). Auto shutdown 24 VDC – model 131-241 to meet ABYC standards for diesel. \_\_\_\_\_
  3. One (1) KIDDE (#466112) USCG approved B-I 5 lb ABC Extinguisher on a non-ferrous mount shall be in the main cabin. \_\_\_\_\_
  4. One (1) KIDDE (#466204) USCG approved B-II 10 lb ABC Extinguisher shall be mounted **in the area of the transom cockpit**. \_\_\_\_\_
- E. Electrical System
1. The DC electrical system shall be primarily 24 volts \_\_\_\_\_
  2. A converter shall be used to produce 12 volts for some electronics and power- point receptacles. \_\_\_\_\_
  3. Batteries, four (4), shall be OPTIMA (p/n – D34M) connected as two pair in series. One (1) set of two batteries for house electrical loads. The second set is for engine starting. \_\_\_\_\_
  4. All batteries shall be anchored in a heavy-duty hold-down container. No plastic boxes shall be used. \_\_\_\_\_
  5. The electrical panel shall be custom made with engraved legends and shall be divided in five (5) sections: AC shore loads, Inverter loads, 12 VDC loads, 24 VDC loads, and bilge pump controls. \_\_\_\_\_
  6. The electrical panel shall be hinged to form the door to the electrical cabinet in which all-electrical service equipment and buss bars shall be consolidated. \_\_\_\_\_
- F. Electrical Controls
1. All battery disconnects and paralleling functions shall be accomplished with remote controlled high amp relays – switched from the helm station. No battery selector switches shall be used. \_\_\_\_\_
  2. Relays and all high amp breakers shall be contained within a NEMA 4X enclosure with hinged gasketed door and sealed watertight (strain relief) penetrations. This system shall be located within the engine room. \_\_\_\_\_
  3. A circuit breaker shall be provided for every system or function. \_\_\_\_\_
  4. Circuit breakers shall be AIRPAX IUG type. No fuses shall be used. \_\_\_\_\_

5. 10% of the total breakers installed shall be provided as spares. \_\_\_\_\_
6. All component terminations shall be made with terminal blocks and such terminations are within the engine rooms or bilge area. Terminal blocks shall be enclosed. \_\_\_\_\_
7. A NEMA 4X enclosure with gland/strain relief penetrations shall be used for the terminal block enclosure(s). \_\_\_\_\_
8. All terminal blocks or enclosures shall be labeled and coordinate with electrical diagrams in the maintenance manual. \_\_\_\_\_

G. Cabin (Pilot House)

1. The cabin shall be fully enclosed, full walk-around, 8' wide by 12' long main cabin with three (3) forward sloping windows, sliding side windows, aft windows, stand up head enclosure and watertight door. \_\_\_\_\_
2. The cabin shall be constructed of 0.125" 5052 alloy. \_\_\_\_\_
3. The cabin shall be positioned so as to provide for cockpit level walk around space between gunnels and the sidewalls. \_\_\_\_\_
4. The upper sidewalls of the cabin shall be recessed to provide enough shoulder room while transiting the walk space. \_\_\_\_\_
5. The cabin shall have an electronics mast mounted to the roof that is hinged and easily lowered. \_\_\_\_\_
6. The electronics mast shall contain anchor light, running lights, towing light, flag mast and mounting surfaces for antennas, spotlight, law enforcement lighting, port and starboard halogen work lighting, and a camera cluster. \_\_\_\_\_
7. Under the hinged mast shall be mounted the siren, loud hailer, and horn. \_\_\_\_\_
8. The cabin shall be structured with fore and aft beams that will allow for the cabin sides to be lower in the seated areas yet retain a minimum 6'6" headroom clearance in the central cabin area. \_\_\_\_\_
9. The cabin shall have side windows that will slide open to a minimum of 18". \_\_\_\_\_
10. Entry to the cabin shall be through a door located amid ship in the aft bulkhead. The door shall open toward the stern and when in the fully open position, the door shall be securely latched to the cabin bulkhead on the port side. \_\_\_\_\_
11. The doorway shall have a minimum 25" clear opening. \_\_\_\_\_
12. Cabin walls and ceiling shall be insulated with 2" ridged, closed cell foam over which interior paneling is applied. Window areas shall have ½" foam panels covered in ballistic nylon for additional thermal and sound absorption. \_\_\_\_\_
13. Ceiling panels shall have vinyl covering over ¼" foam. All panels shall be removable. \_\_\_\_\_
14. The cabin interior shall maintain a maximum decibel (db) rating of 85db and meet all OSHA requirements. \_\_\_\_\_



15.
The cabin shall have a cuddy that shall be a minimum of 6’6” in length.
16.
A ladder shall be incorporated into the cabin on the starboard side exterior wall to facilitate roof stowage access.
17.
Lashing points shall be installed in eight (8) places on the cabin roof for additional gear.
- H.
Environmental Systems

1.
All exterior windows shall be 6 MM tinted, laminated safety glass.

2.
The three forward windows shall be clear and are laminated and tempered.

3.
Windows shall be set in butyl mastic with inside retaining rings.

4.
The cabin door shall be watertight with integral stainless lockset fully insulated with “dogs” for positive closure.

5.
Both windows and door shall have black powder coated frames.

6.
Each of the three front windows shall have installed heavy-duty wipers with isolated ground and noise filtered circuitry. Wiper controller shall provide sequence selection, speed, and washing cycle. Wiper control shall be IMTRA model EX210604.

7.
Wipers shall be self-parking.

8.
A window wash system shall be installed on the forward windows with the wiper system.

9.
Cabin heat shall be provided by the starboard propulsion engine coolant circuit and ducted to four (4) locations, providing general heat and defrosting functions by a twin turbo blower system. (Isolation valves for this system shall be provided.)

10.
Isolation valves shall be installed on both supply and return of the heater coolant circuit.

11.
Cabin Air Conditioning shall be provided by an engine mounted compressor and a seawater cooled condenser.

12.
The heating and cooling system shall be manufactured by HAMMOND AIR (Artic Wolf). It shall be custom built to adapt to the CUMMINS engine. The evaporator shall supply a minimum 24,000 BTU ducted to the four locations in the cabin.

13.
Two (2), 2-speed fans shall be installed to provide air circulation on the three forward windows. Fans shall be MARADYNE (p/n – F200-524)

14.
A thermostatically controlled 120V heater shall be located in the base area under the seats on the port side. It shall be operable on shore power only.
- I.
Interior

1.
The helm station shall be located on the starboard side of the interior.

2.
The navigator shall be on the port side of the interior.

3. Both the helm and navigator seats shall be from Bentley MFG. Inc. "Severe Duty Mariner" with custom black ballistic nylon upholstery. These seats are hydraulic shock absorbing. \_\_\_\_\_
  4. Along the port side behind the navigator there shall be two (2) seats facing each other with a fixed chart/work table in-between. \_\_\_\_\_
  5. The seats shall be from Bentley MFG. Inc. covered in black ballistic nylon matching the helm and navigator seats. \_\_\_\_\_
  6. The fixed chart/work table shall have a slide resistant surface. \_\_\_\_\_
  7. There shall be several storage drawers along the port side under the seating areas. The storage areas shall be specifically designed drawers or lockers, including a roll-out gun locker to handle long weapons and shall be secured by an electrically activated locking system. \_\_\_\_\_
  8. Along the starboard side behind the helm there shall be a galley with a counter, microwave, and refrigerator. Behind the galley shall be an enclosed head with gasketed door. Inside the enclosure shall be a sink and shower fixtures. \_\_\_\_\_
  9. The front wall of the head enclosure shall have a fixed clear window. A shade shall be on the inside to provide privacy when in use. \_\_\_\_\_
  10. The cuddy shall have a berth along the port side. \_\_\_\_\_
  11. The berth shall have 3" ballistic nylon cushions. \_\_\_\_\_
  12. The starboard side of the cuddy shall be storage for a minimum of twelve (12) PFD's. It is also where the electrical panel shall be located. The electrical panel shall be hinged to form a door to an electrical cabinet in which all-electrical service equipment and buss bars are consolidated. \_\_\_\_\_
  13. The cuddy shall have a skylight hatch to access the foredeck **18" X 18"** opening. The hatch shall be a LEWMAR Ocean Series (p/n – 39660070). \_\_\_\_\_
  14. Numerous handrails or handholds shall be incorporated into the interior structure. All hardware shall be of the highest commercial quality available. \_\_\_\_\_
  15. The floor shall be cushioned with commercial non-slip rubber flooring and diamond plate step surfaces. \_\_\_\_\_
  16. A AM/FM/CD/DVD stereo receiver Alpine model DVA 9860 and a minimum of four (4) speakers shall be installed in the cabin. \_\_\_\_\_
  17. The interior layout and placement of gauges, controls, and electronics shall be agreed and approved by the KCSO MDU representative and the builder. \_\_\_\_\_
- J. Plumbing and Mechanical
1. The head shall be VACUFLUSH model 706 \_\_\_\_\_
  2. The holding tank (HTS) with integral vacuum generator model #011812 shall be fitted with 24V electrical. \_\_\_\_\_

3. A TANKWATCH #4 level monitor system shall be installed and located in the cabin proper. \_\_\_\_\_
4. The sink shall be SCANDVIK (p/n – 10242). \_\_\_\_\_
5. The faucet shall be SCANDVIK (p/n – 104000MR). \_\_\_\_\_
6. The shower equipment shall be SCANDVIK (p/n – 104000MC). \_\_\_\_\_
7. The water heater shall be a FORCE 10 (p/n – 3495911) 110V 6-gallon stainless steel unit located in the engine room. The engine heat (coolant) circuit shall be isolated by supply and return valves. \_\_\_\_\_
8. The potable water pressure pump shall be JABSCO sensor max VSD (p/n – 31755) 24V. \_\_\_\_\_
9. The bilge pumps shall be RULE 2000 model #12 24V with Ultra Safety Systems “J.R. –PS02” pump switch (mercury free) on each pump. \_\_\_\_\_
10. A pump shall be installed in the bilge of each engine room and the forward bilge of each hull. \_\_\_\_\_
11. High-water alarm system for all four (4) bilge areas with control and mute panel in the cabin shall be provided per NFPA1925 \_\_\_\_\_
12. All four bilge pumps shall operate from a single dedicated panel allowing on/off and testing functions with L.E.D. light to indicate on position. There shall be a separate circuit (always on) for all bilge pumps protected by a dedicated circuit breaker. \_\_\_\_\_
13. The refrigerator freezer unit shall have 2.5 cubic feet of storage and be from NOVAKOOL (p/n – R2600 DC). \_\_\_\_\_
14. The microwave shall be a 1,000-Watt TAPPAN (p/n – TM 7050S). \_\_\_\_\_

K. Instrumentation

1. The Helm station shall have all engine control switches and alarms flush mounted in a custom dash panel. All instruments shall have engraved legends indicating its use or function. \_\_\_\_\_
2. CUMMINS “Smart Craft diesel view” digital display shall be used for the CUMMINS engines and shall be flush mounted into the helm station dash. \_\_\_\_\_
3. Steering gauge (jet thrust position) VDO (p/n – 08 601-104) shall be flush mounted above the steering helm. \_\_\_\_\_
4. Two (2) digital analog engine tachometers VDO shall be mounted into the helm station dash. \_\_\_\_\_

L. Steering and Controls

1. The helm shall be TELEFLEX SEA STAR PRO pump with a 2.4 displacement (p/n – HH5272). \_\_\_\_\_
2. The wheel shall be an EDSON (p/n – 972ALT-13-750). \_\_\_\_\_
3. All hydraulic hoses shall be Kevlar with stainless steel end fittings. \_\_\_\_\_
4. The steering ram shall be a JASTROM (p/n – JA93100-1). \_\_\_\_\_

5. The steering connection between jets shall be a stainless steel tie-bar.

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6. The throttle and bucket controls shall be LIVORSI MARINE “GAFFRIG” (p/n – TH22BK) **or approved equivalent**, 4-handle assembly with standard throttle for each engine, and the jet bucket control shall have no detent position for neutral.

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7. The transmission (marine gear) control shall be a LIVORSI MARINE “GAFFRIG” (p/n – TH11W), **or approved equivalent**, set up for neutral and back flushing capability of each jet. Each shall have an engraved label showing functionality of each position.

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8. All push/pull cables shall be MORSE 33C “Supreme Red Jacket”.

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9. End fittings on all cables shall be 316 stainless steel ball joints.

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- M. Electronics and Navigation

1. All in one GPS/radar/depth sounder, single display shall be a SIMRAD model# CX44 Nav station with 10” LCD screen.

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2. Radar with 4 kw scanner SIMRAD model# RB716A

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3. GPS with MGL-3 antenna.

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4. VHF marine radio, Standard model Matrix GX1280S

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5. VHF antenna, MORAD #156HD. Installed on folding stainless steel ratchet mount

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6. Compass, Navigator Series flush mount bulkhead type, Ritchie p/n BN-202.

\_\_\_\_\_
- N. Electrical Equipment

1. DC to DC converter, 24V to 12V, MASTERVOLT model #8770 300w.

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2. Battery ACR paralleling and charging relay, BlueSeas model #9112.

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3. Battery charger, MASTERVOLT model #MASS.24/50 (117V).

\_\_\_\_\_

4. Inverter, MASTERVOLT model #SINE 24/2500 (24V).

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5. The inverter which is provided with an energy monitor panel MASTERVOLT model # Masterlink/MICC shall be integrated into circuit breaker panel area.

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6. A minimum of five (5) 12V power point outlets shall be installed within the cabin.

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7. Three (3) 120V AC (inverter power) outlets shall be installed within the cabin.

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8. Three (3) 120V AC (shore power) outlets shall be installed within the cabin

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9. A minimum of one (1) 120V AC (inverter power) and one (1) 120V AC (shore power) waterproof deck outlet shall be installed in the port aft cockpit area.

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10. A separate AC panel for shoreline power complete with galvanic isolator shall be installed. (50 amp minimum service.) Each AC accessory is switched with a circuit breaker. Five (5) circuits and two (2) spare circuits shall be provided. \_\_\_\_\_
  11. In general, all wiring and switchgear shall conform to NAVY/military specifications. \_\_\_\_\_
  12. All switches shall be waterproof toggle type from EATON (8500 series). \_\_\_\_\_
  13. Waterproof locking toggle type switches shall be used for remote battery controls and keyless ignition, EATON (8501 series). \_\_\_\_\_
  14. All wiring shall conform to military specifications, multicolor grade. Marked as conforming to IEEE 45, IEEE 1580, and IEEE 1202 approvals. USCG and ABS accepted cable with tinned copper conductors as per ASTM B-33 flexible stranding AMERCABLE Gexol" or approved equal. Insulation of polyofinic -40C to +90C (low smoke, zero halogen). \_\_\_\_\_
  15. All cables shall be clearly labeled at each end using aluminum cable tags or shrink tubing with mechanically applied lettering. Single conductor UL1426 wire shall be used within enclosures and for jumper wires. \_\_\_\_\_
  16. Wire ways shall be loomed or in raceways and supported at a minimum of every sixteen inches by stainless steel clamps. Nylon coated stainless steel ties or banding shall be used in all bilge or engine room areas. \_\_\_\_\_
- O. Specialty Electronics
1. Two (2) King County Sheriff's Office specific MOTOROLA XLT 5000 "police" radios and antennas shall be installed. These radios and antennas will be supplied by the King County Sheriff's Office and shall be installed as part of the manufacturing process. \_\_\_\_\_
  2. The radios will be for direct two-way communications and shall be installed so that they are easily accessible to the helm and navigator stations. \_\_\_\_\_
  3. A third antenna shall be installed for a future radio. \_\_\_\_\_
  4. All radios shall be installed with a separate circuit protection per radio (three circuits.) Circuit protection shall be per manufacturer's specification. \_\_\_\_\_
  5. All antennas shall be MORAD marine grade and installed per manufacturer specification and design perimeters. \_\_\_\_\_
  6. A Camera cluster pod consisting of a thermal imaging camera, a infrared night vision camera, a 312X zoom CCD camera, and controls will be supplied by the King County Sheriff's Office and shall be installed as part of the manufacturing process. \_\_\_\_\_
  7. A four channel DVR system and daylight readable 15" LCD panel will be supplied by the King County Sheriff's Office and installed per manufacturers specifications to the camera cluster. \_\_\_\_\_

P. LCD Panel

1. The LCD panel shall be installed on the forward dash. \_\_\_\_\_
2. The LCD panel and camera controls shall be easily used and visible from the navigator and helm stations. \_\_\_\_\_

Q. Marine Intercom System

1. A marine intercom system incorporated into all communication radios from DAVID CLARK CO. shall be installed. (p/n U9500 master station) \_\_\_\_\_
2. Four (4) headset jacks, one (1) at each seat location inside the cabin shall be installed. \_\_\_\_\_
3. Three (3) headset jacks, two (2) in the work deck area and one (1) near the starboard foredeck outside shall be installed. \_\_\_\_\_
4. Four (4) headsets shall be provided with the intercom system. (p/n H9540). \_\_\_\_\_
5. Headset hangers shall be integrated into the cabin at each seating location for the storage of each headset when not in use. \_\_\_\_\_

R. Lighting

1. All lighting shall be 24V cabin general lighting. There shall be a minimum of seven (7) RESOLUX models #720, 8w fluorescent. \_\_\_\_\_
2. All night lighting shall be red L.E.D. recessed in the cabin from HELLA MARINE (p/n – 96265). There shall be a minimum of five (5) within the cabin. \_\_\_\_\_
3. Three (3) halogen deck lights shall be installed. Two (2) located on the aft end of the cabin to illuminate the cockpit and one (1) located forward illuminating the foredeck. \_\_\_\_\_
4. The halogen lights shall be JABSCO (p/n – 289413) and installed to welded brackets. All cabin wire penetrations shall use “cable clams” from BLUE SEA SYSTEMS (p/n – 1002). \_\_\_\_\_
5. The transom shall have two (2) flush mounted halogen lights for grid illumination. Barnegat Light model QL-FT-24. \_\_\_\_\_
6. Four (4) waterproof fluorescent lights shall be installed in the engine rooms, (two (2) per engine room). The lights shall be THINLIGHT 24V (p/n – 553). \_\_\_\_\_

S. Special Law Enforcement Equipment and Lighting

1. WHELEN model LT2BBBBP “liberty” mini light bar, all blue lighting, super L.E.D. blue, and shall be installed on the radar and navigational mast. \_\_\_\_\_
2. WHELEN blue L.E.D. super blue strobes shall be incorporated into the outboard side of the bow tunnel. These shall be waterproof. \_\_\_\_\_
3. All law enforcement lighting (blue lights) shall be switched from the dash and on its own circuit breaker. A blue LED light shall be installed in the cabin readily seen from the helm station that shall indicate when the emergency lighting is activated. \_\_\_\_\_
4. WHELEN siren-loud hailer (p/n – 295HF52X). \_\_\_\_\_

5. Two (2) WHELEN 120db speakers (p/n – SA314P). One (1) speaker mounted facing forward and one (1) mounted facing aft. \_\_\_\_\_
6. Two (2) halogen docking lights shall be installed next to the blue strobes in the bow tunnel. Both lights shall be integrated into a welded pocket within the tunnel plating. \_\_\_\_\_
7. One (1) ACR ELECTRONICS spotlight with remote control, model # XIRCL100D shall be installed on the mast. \_\_\_\_\_

T. Dewatering/Firefighting System

1. The boat shall have both fire fighting and dewatering capability permanently installed and housed in the boat structure. \_\_\_\_\_
2. The water pump shall be driven by a hydraulic motor, which shall be powered by a pair of hydrostatic pumps mounted to the PTO output of the Twin Disc Transmission of each engine. \_\_\_\_\_
3. The system shall produce a minimum of 400 GPM @ 150 PSI with both engines not exceeding 1500 RPM. \_\_\_\_\_
4. Discharge distribution shall be to a single monitor at the bow and two (2) 1-1/2" valve hose connections in the cockpit area for hand lines. \_\_\_\_\_
5. Fire suction shall be through a sea chest of adequate size, which shall allow for debris clearance from inside the boat. A strainer system shall be all 316 stainless steel. \_\_\_\_\_
6. The system shall provide for a valve dewatering standpipe with a minimum 2" connection. \_\_\_\_\_
7. Piping shall be all aluminum Schedule 40-6061 alloy or 316 stainless steel, engineered and braced to support a minimum of 50% overload. \_\_\_\_\_
8. The pump shall be a Hale Model CBPH pump of all bronze construction. \_\_\_\_\_
9. Hydraulics shall be of the best quality Rexroth or approved equivalent. \_\_\_\_\_
10. Stoltz couplings shall be used for dewatering fittings. \_\_\_\_\_
11. Drains shall be provided at various portions of the distribution piping where appropriate. \_\_\_\_\_
12. All piping shall be hydrostatically tested to 200psi for a minimum of one hour prior to delivery. \_\_\_\_\_
13. There shall be a remote controlled water monitor installed at the bow at the leading edge of the cuddy cabin. \_\_\_\_\_
14. The fire monitor shall be from ELKHART BRASS PRODUCTS model #8494-01 "Sidewinder", remote controlled by "Mini Monitor", **or approved equivalent** \_\_\_\_\_
15. Piping and valves shall meet NFPA1925 and USCG standards. \_\_\_\_\_

U. Anchor and Towing

1. An anchor winch shall be installed. MUIR model “Cougar” 24V winch with chain and rope gypsy deck mounted over chain and rope locker. A boxed in deck slot and 4” anchor roller integrated into deck with chocks on underside of tunnel to retain anchor flukes. \_\_\_\_\_
2. Anchor shall be a “Delta Fast Set” by LEWMAR model # 318065 complete with 20 feet 5/16” chain, 200 feet 9/16” nylon line, and stainless steel swivel. \_\_\_\_\_
3. Two (2) deck mounted up/down foot switches and an on dash mounted switch shall be installed for anchor deployment and retrieval. \_\_\_\_\_
4. A custom welded tow post and rope reel shall be fitted and integrated into the transom. The tow post shall be a 4” diameter pipe with solid 1-3/8” cross “T” and cap. \_\_\_\_\_
5. The rope reel shall be manually operated with turning lock and include 300 feet of 5/8” line. \_\_\_\_\_

V. Painting Specifications

1. The topside shall be bead blasted and/or mechanically sanded on all aluminum surfaces before being washed with phosphoric acid. \_\_\_\_\_
2. It shall be primed with AWLGRIP 30–Y .94 primer and 545 epoxy primer. \_\_\_\_\_
3. The topside shall get two (2) coats topcoat AWLGRIP linear polyurethane. \_\_\_\_\_
4. Colors for the topside shall be white, green, and gray. The design will be specified after contract award. \_\_\_\_\_
5. The bottom shall be bead blasted and/or mechanically sanded on all surfaces. Before being washed with phosphoric acid. \_\_\_\_\_
6. It shall have a prime coat of AMERICOAT #235 epoxy. \_\_\_\_\_
7. It shall have two (2) barrier coats of INTERLUX underwater primer. \_\_\_\_\_
8. The bottom shall be then painted with two (2) coats of TRILUX 33. \_\_\_\_\_
9. The non-skid deck coating shall be applied in a sectional design pattern with radius corners applied to all walking flats. \_\_\_\_\_

W. Commissioning/Documentation

1. All mechanical and electrical systems shall be schematically diagramed including all electrical wire codes, terminal blocks, and the contents of the 4X electrical enclosures. \_\_\_\_\_
2. The engine, jet pump, and transmission manuals as well as all mechanical and electronic equipment information shall be supplied in an organized binder format. \_\_\_\_\_

X. Warranties

1. The Hull, Deck, and Cabin shall have a minimum five (5) year manufacturers warranty on materials and workmanship from date of acceptance of the completed boat. \_\_\_\_\_



2. Engines, jet pumps, and transmissions shall include full manufacturer's warranty from acceptance date of the completed boat. \_\_\_\_\_

3. Equipment, electronics, and miscellaneous shall include manufacturers standard warranties. \_\_\_\_\_

Y. Trials, Transit, and Training

1. All wet trials shall be done before delivery. \_\_\_\_\_

2. All systems shall be tested for a minimum of two (2) hours, including the dewatering/fire fighting equipment before delivery. \_\_\_\_\_

3. Transit shall be at builders expense by the builder or a qualified, licensed, and bonded marine/boat transfer company. \_\_\_\_\_

4. At delivery/acceptance or at a mutually agreed time thereafter, the builder shall provide eight (8) hours of boat familiarization training at the King County Sheriff's Office Marine Dive Unit, Lake Washington, 5165 Carillon Point, Kirkland, WA 98033. \_\_\_\_\_

Z. Performance Standards

1. The boat shall have the ability to meet or exceed a minimum maximum speed of 34 knots and maintain that speed on calm waters. \_\_\_\_\_

2. The boat shall be able to crash stop without damage within 70 feet. \_\_\_\_\_

3. Shall be able to go from a dead still position to a full plane in under 100 yards. \_\_\_\_\_

4. Shall be capable of making half and full speed 360 degree turns to both port and starboard without loss of control or danger of vessel rolling. These turns shall be within a 160 foot radius. \_\_\_\_\_

AA. Certifications

1. The boat shall be constructed in accordance with and comply with all applicable United States Coast Guard rules and regulations, Code Of Federal Regulations 46, ABYC, American Bureau of Shipping, and NFPA1925. \_\_\_\_\_

BB. Inspections

1. The boat shall be subject to inspection during construction by a representative of the King County Sheriff's Office Marine Dive Unit. Any unsatisfactory materials or evidence of faulty workmanship shall be removed and replaced or corrected by and at the expense of the manufacturer. Failure to find faulty materials or workmanship by King County at inspection times does not release the manufacturer of responsibility for said faulty materials or workmanship. \_\_\_\_\_

2. The Contractor/manufacturer shall provide for a minimum of two (2) trips for (3) three KCSO MDU representatives to the factory. Tentatively one trip shall be during the construction of the vessel and one trip shall be during the wet trials. \_\_\_\_\_

## CC. Plans and Designs

1. One (1) set of plans designed to coordinate with these specifications shall be submitted with the bid response. Design drawings shall include, but are not limited to, profile plan, deck plan, and interior plan. Bidders/ manufacturers agree that these plans and specifications shall become the property of the King County Sheriff's Office. The King County Sheriff or their designee shall approve any publicity releases regarding this project. \_\_\_\_\_
2. Bidders may under separate cover submit alternate designs, construction methods, and types of machinery which meet the basic specifications. King County will review submittals to determine whether the bid is an approved equivalent. Bidders accept, by submitting an alternative, King County's determination of acceptance or rejection of any alternative as final. \_\_\_\_\_
3. Along with the plans the bidder shall include the bid price total, references for the same boat in similar service, including agency contact information for referral, and Corporate information to include US federal Tax ID No. \_\_\_\_\_